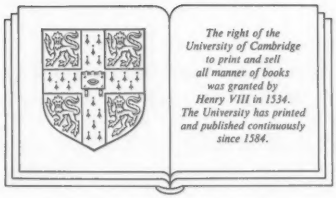
JOURNAL OF PLASMA PHYSICS

VOLUME 40
1988



CAMBRIDGE UNIVERSITY PRESS
Cambridge
New York New Rochelle Melbourne Sydney

Published by the Press Syndicate of the University of Cambridge
The Pitt Building, Trumpington Street, Cambridge CB2 1RP
32 East 57th Street, New York, NY 10022
10 Stamford Road, Oakleigh, Melbourne 3166, Australia

© Cambridge University Press 1988

Printed in Great Britain by the University Press, Cambridge

CONTENTS TO VOLUME 40

PART 1 AUGUST 1988

Pulse shapes for absolute and convective free-electron-laser instabilities. J. A. DAVIES, R. C. DAVIDSON and G. L. JOHNSTON 1

Driven, steady-state RFP computations. J. P. DAHLBURG, D. MONTGOMERY, G. D. DOOLEN and L. TURNER 39

Some particular cases of oblique whistler-mode propagation in a hot anisotropic plasma. S. S. SAZHIN and E. M. SAZHINA 69

Nonlinear interaction of obliquely propagating Bernstein waves with electrons in a plasma. M. SUGAWA 87

Diffusion processes in the field of a monochromatic wave propagating in an inhomogeneous magnetoplasma. D. R. SHKLYAR and V. V. SOLOV'EV 97

Analytical solutions for the current driven by a rotating magnetic field in a cylindrical plasma with azimuthal field. P. A. WATTERSON 109

Measurements of the oscillating fields and the time-averaged forces in rotating magnetic field current drive. G. A. COLLINS, G. DURANCE and J. TENDYS 127

Weakly nonlinear theory of fast steady-state magnetic reconnection. M. JARDINE and E. R. PRIEST 143

Arbitrary-amplitude rarefactive ion-acoustic double layers in warm multi-fluid plasmas. S. BABOOLAL, R. BHARUTHRAM and M. A. HELLBERG 163

Unmagnetized diffusion for azimuthally symmetric wave and particle distributions. P. B. DUSENBERY and L. R. LYONS 179

PART 2 OCTOBER 1988

Statistical mechanics of a spin-polarized plasma. W. Y. ZHANG and R. BALESCU 199

Kinetic equation, spin hydrodynamics amd collisional depolarization rate in a spin-polarized plasma. R. BALESCU and W. Y. ZHANG 215

The structure of reconnection layers. M. F. HEYN, H. K. BIERNAT, R. P. RIJNBEEK and V. S. SEMENOV 235

Effect of electron temperature gradient on the modulational instability of drift waves and anomalous transport due to drift-wave turbulence. D. MAJUMDAR 253

Helicity injection and relaxation in a solar-coronal magnetic loop with a free surface. P. K. BROWNING 263

On nonlinear circularly polarized Alfvén waves. G. MANN 281

Weak nonlinear electromagnetic waves and low-frequency magnetic-field generation in electron-positron-ion plasmas. F. B. RIZZATO 289

Nonlinear Alfvén waves in a finite-beta plasma. E. MJØLHUS and J. WYLLER 299

Drift waves and magnetic field oscillations in cylindrical plasmas. H. A. AEBISCHER and YU. S. SAYASOV 319

The effect of lower-hybrid waves on the propagation of hydromagnetic waves. H. HAMABATA, T. NAMIKAWA and K. MORI 337

The alpha-effect generated by standing Alfvén waves. T. NAMIKAWA and H. HAMABATA 353

Higher-order corrections to the ion-acoustic waves in a relativistic plasma (isothermal case). G. P. PAKIRA, A. ROY CHOWDHURY and S. N. PAUL 359

Caustics and virtual cathodes in electron beams. E. A. COUTSIAS 369

PART 3 DECEMBER 1988

Nonlinear interaction of electrostatic waves in a magnetized Vlasov plasma. J. LARSSON 385

Ion plasma waves in dusty plasmas: Halley's comet. U. DE ANGELIS, V. FORMISANO and M. GIORDANO 399

Electromagnetic fluctuations from energetic particles in plasmas. C. CHU and J. L. SPERLING 407

Stochastic magnetic field generation in MHD resistive instabilities: validity limits of linear stability analysis. M. PETTINI and G. TORRICELLI-CIAMPONI 419

An extended analytical solution of the Boltzmann equation for non-homogeneous fusion and astrophysical plasmas. S. CUPERMAN and D. ZOLER 441

Resonance cones in a drifting plasma. V. FIALA and V. I. KARPMAN 455

Enhancement of collisional drift waves in a plasma cylinder. G. PRABURAM and V. K. JAIN 465

Linear and nonlinear coupled Alfvén–Varma modes. P. K. SHUKLA and L. STENFLO 473

On tokamak equilibrium. R. D. HAZELTINE and M. H. MONTGOMERY 481

The unstable modes of a two-component electron plasma. P. McQuillan and K. G. McClements 493

Global energetics of fast magnetic reconnection. M. Jardine and E. R. Priest 505

Spectral analysis of turbulent effects on resistivity and the tearing instability. D. Deeds and G. Van Hoven 517

Linear stability of Vlasov–Poisson electron plasma in crossed fields. Perturbations propagating parallel to the magnetic field. H.-J. Lee, D. J. Kaup and G. E. Thomas 535

Effects of higher-order nonlinearity and finite geometry on the propagation of KdV solitons. B. Ghosh and K. P. Das 545

Approximation of the dielectric properties of Maxwellian plasmas: dispersion functions and physical constraints. P. A. Robinson and D. L. Newman 553

Early onset of dissipative electrostatic drift-wave turbulence. K. Katou 567

Ion-acoustic solitary waves in an inhomogeneous plasma. B. K. Shivamoggi 579

Analytical properties and numerical solutions of the derivative nonlinear Schrödinger equation. S. Ponce Dawson and C. Ferro Fontán 585

Corrigendum. M. Faghihi and J. Scheffel 603

Author index to volume 40 605